

**CALIFORNIA DEBT AND INVESTMENT  
ADVISORY COMMISSION**

**Presents**

**Advanced Concepts and  
Practices for Investing  
Public Funds**

**Renaissance Long Beach Hotel  
Long Beach, California  
November 16-17, 2006**

# **Rebalancing Your Portfolio**

**Presented by:**

**Nancy Jones  
PFM Asset Management**

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# Amazing Transformations



**Presenter:** Nancy Jones—Managing Director, PFM Asset Management

# Amazing Transformations



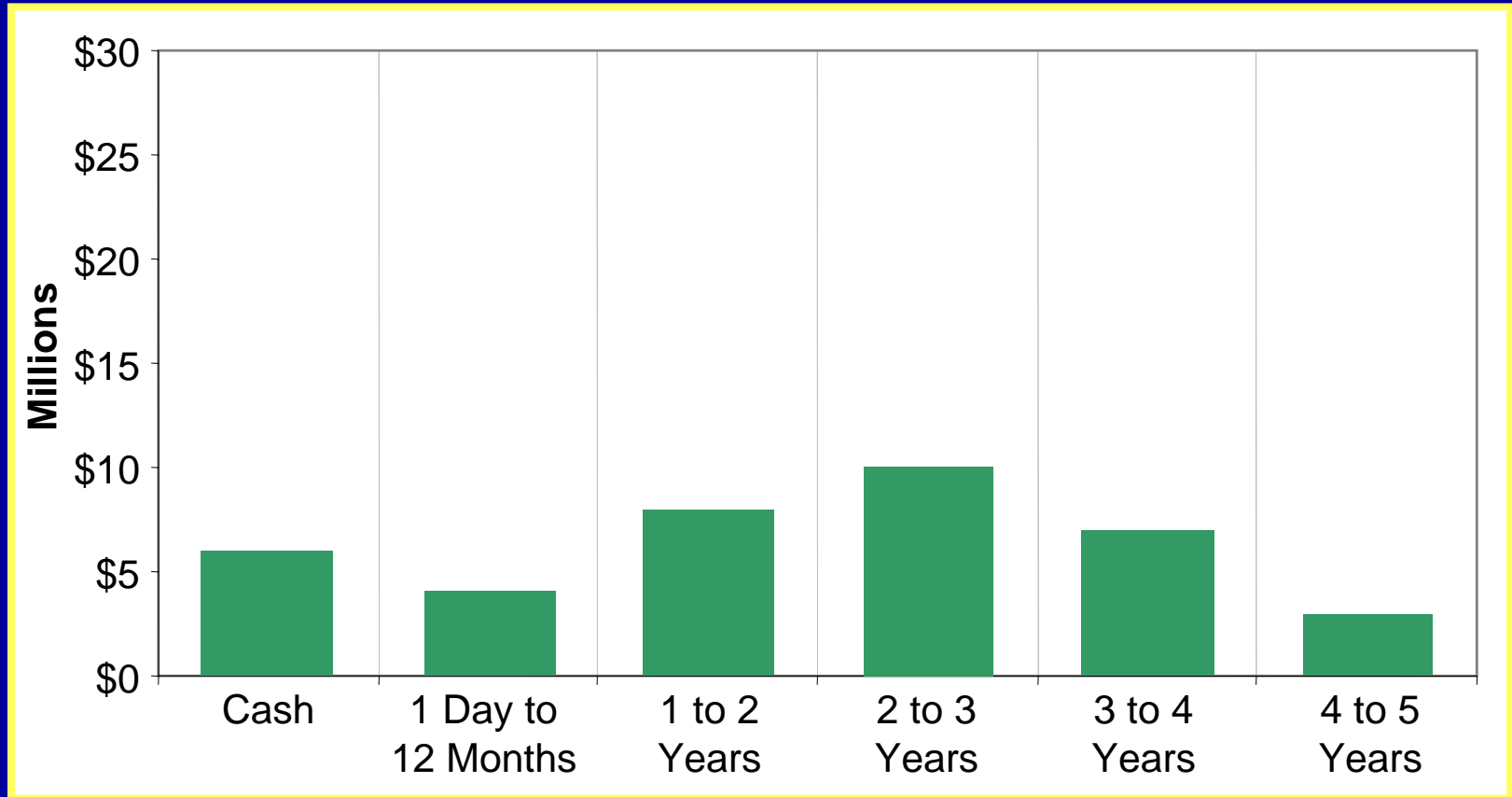
**Presenter:** Nancy Jones—Managing Director, PFM Asset Management

# Inspiring Action



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# Effect of Time on Portfolio



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# What Is Rebalancing?

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**Bringing the portfolio  
back in line with the  
chosen strategy**

# Why Rebalance?

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- **Maintain portfolio relative to a target**
- **Something changes**
  - Market conditions
  - Credit quality
  - Investment strategy

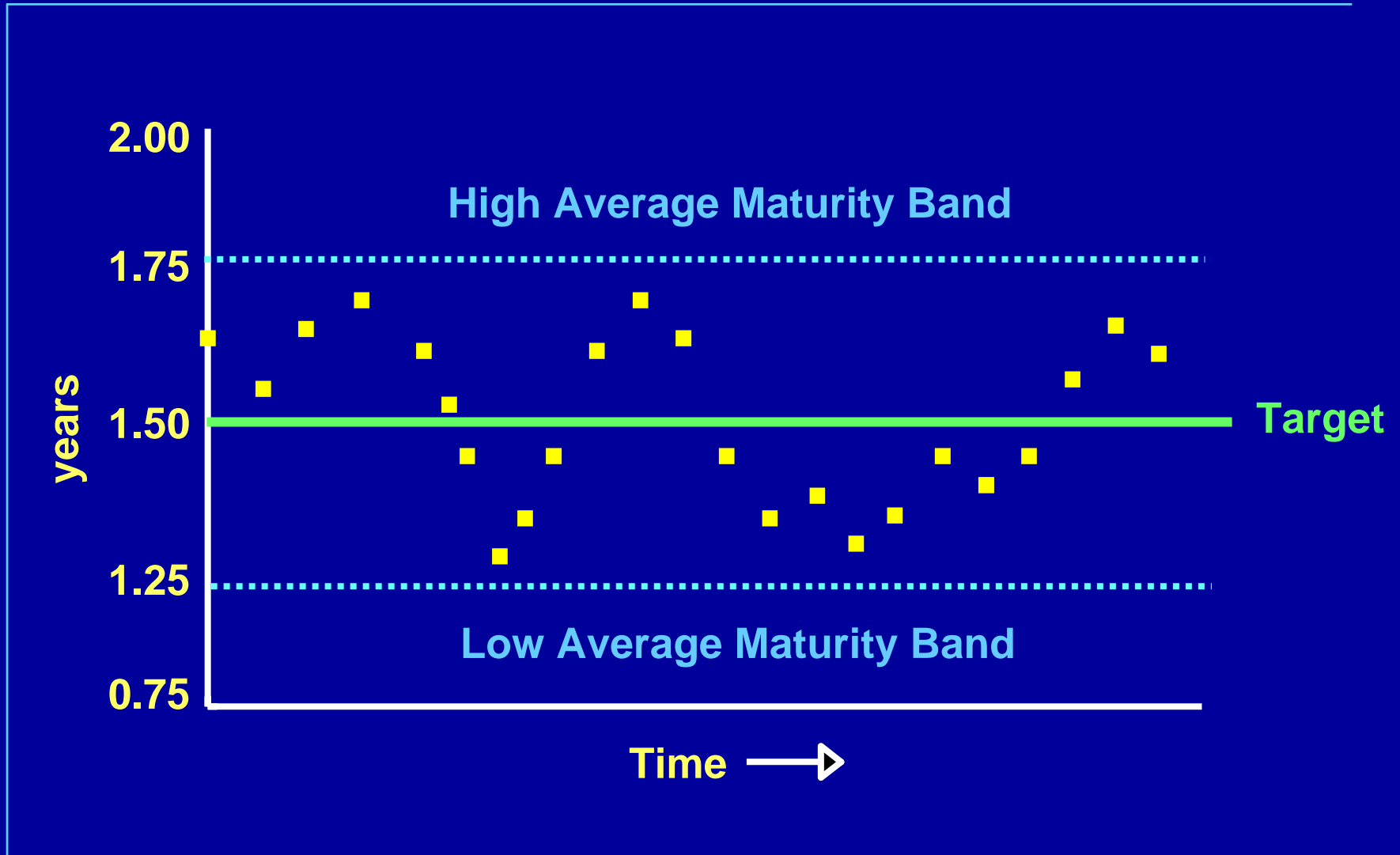
# Maintain Portfolio Relative to a Target

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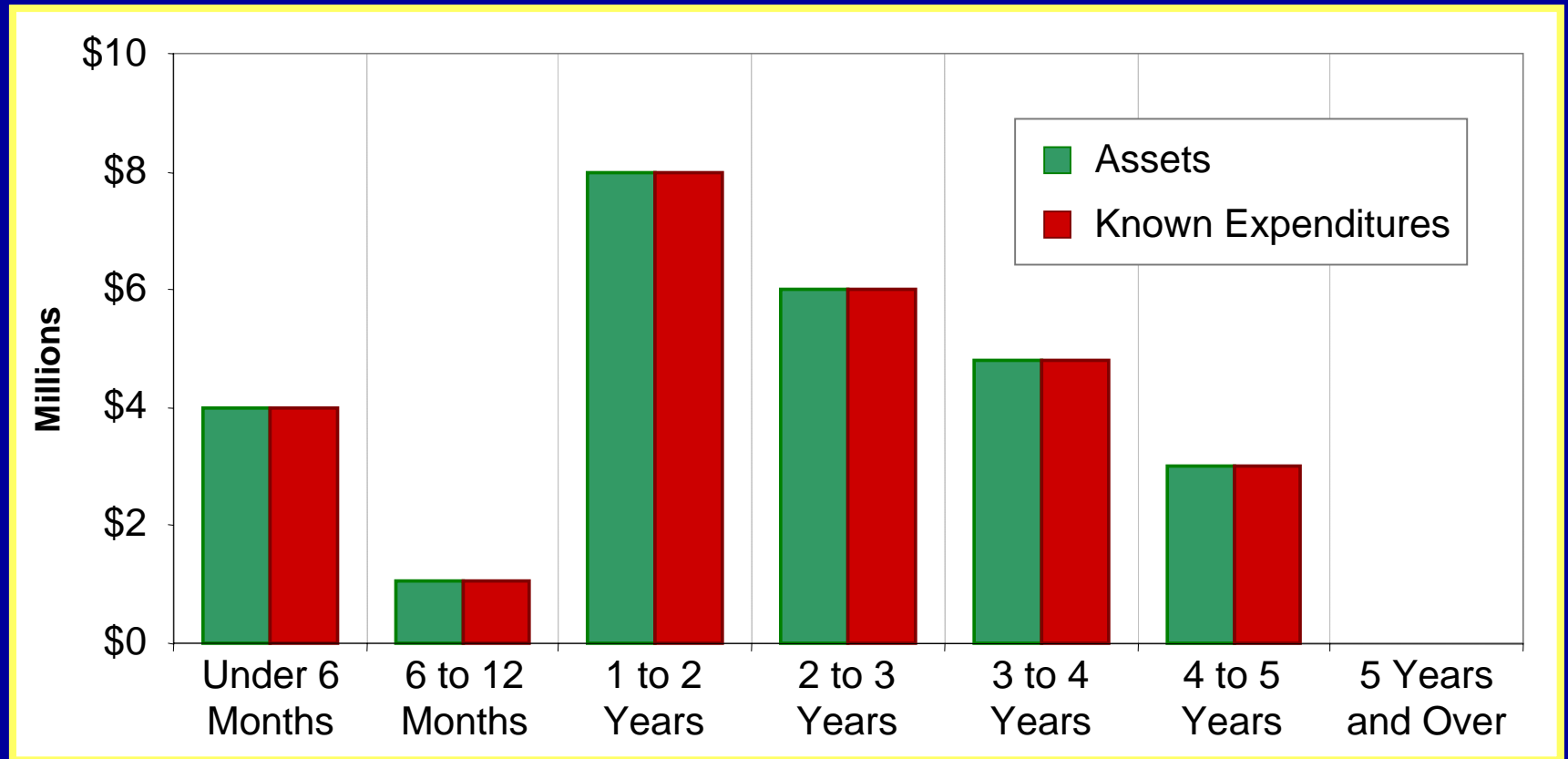
- **Average maturity or duration**
- **Matching assets to known expenditures**



# Target: Average Maturity or Duration



# Target Investments to Spending Dates



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# Something Changes: Market Conditions

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- Rising rates
- Falling rates
- Shape of yield curve

# Market Conditions: Rising Rates

## 2-Year U.S. Treasury Yield History January 2006 – November 2006



Source: Bloomberg

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# Market Conditions: Falling Rates

## 2-Year U.S. Treasury Yield History January 2006 – November 2006

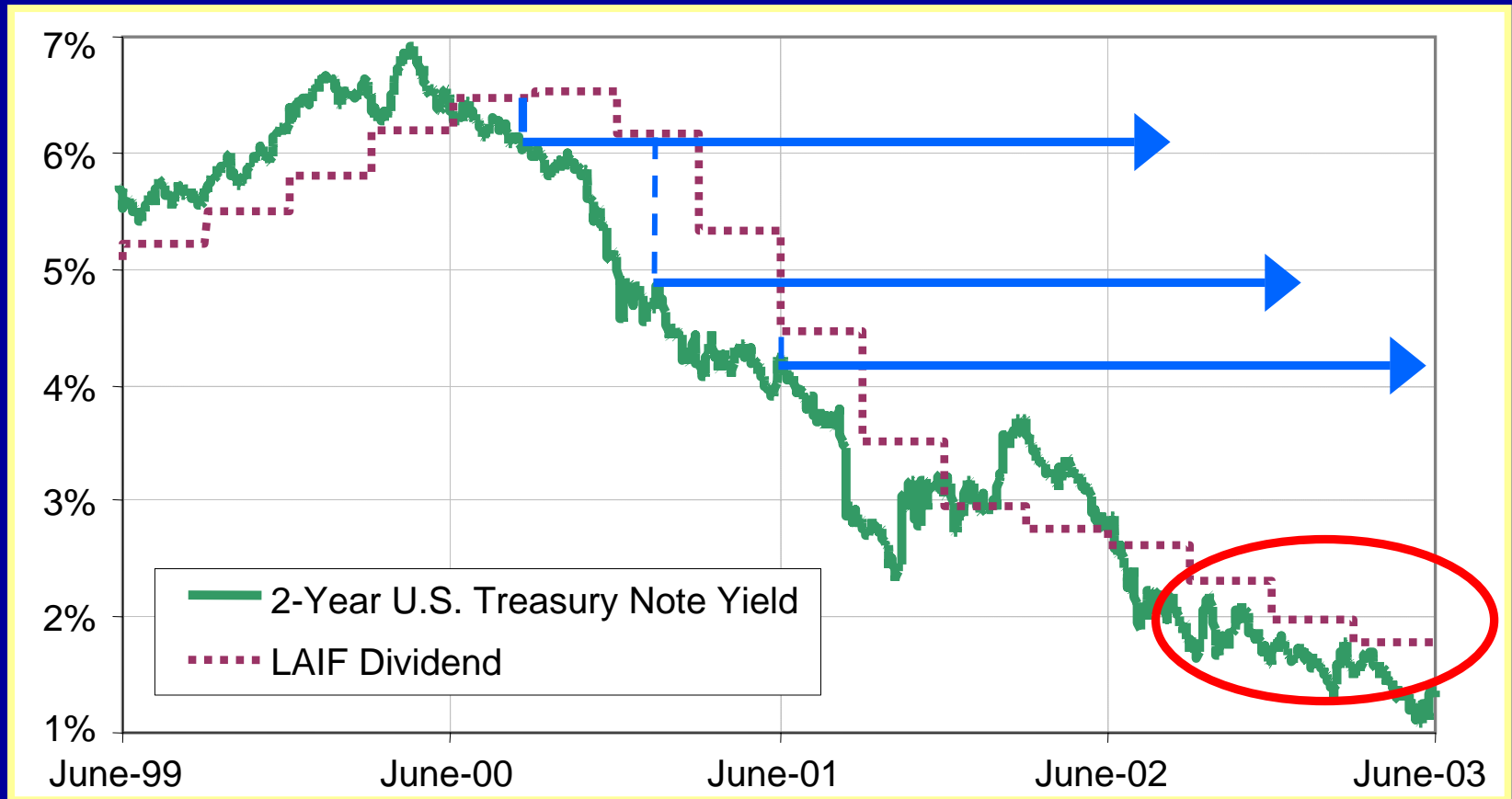


Source: Bloomberg

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# Market Conditions: Falling Rates

Yield History: 2-Year U.S. Treasury and LAIF  
June 1999 - June 2003



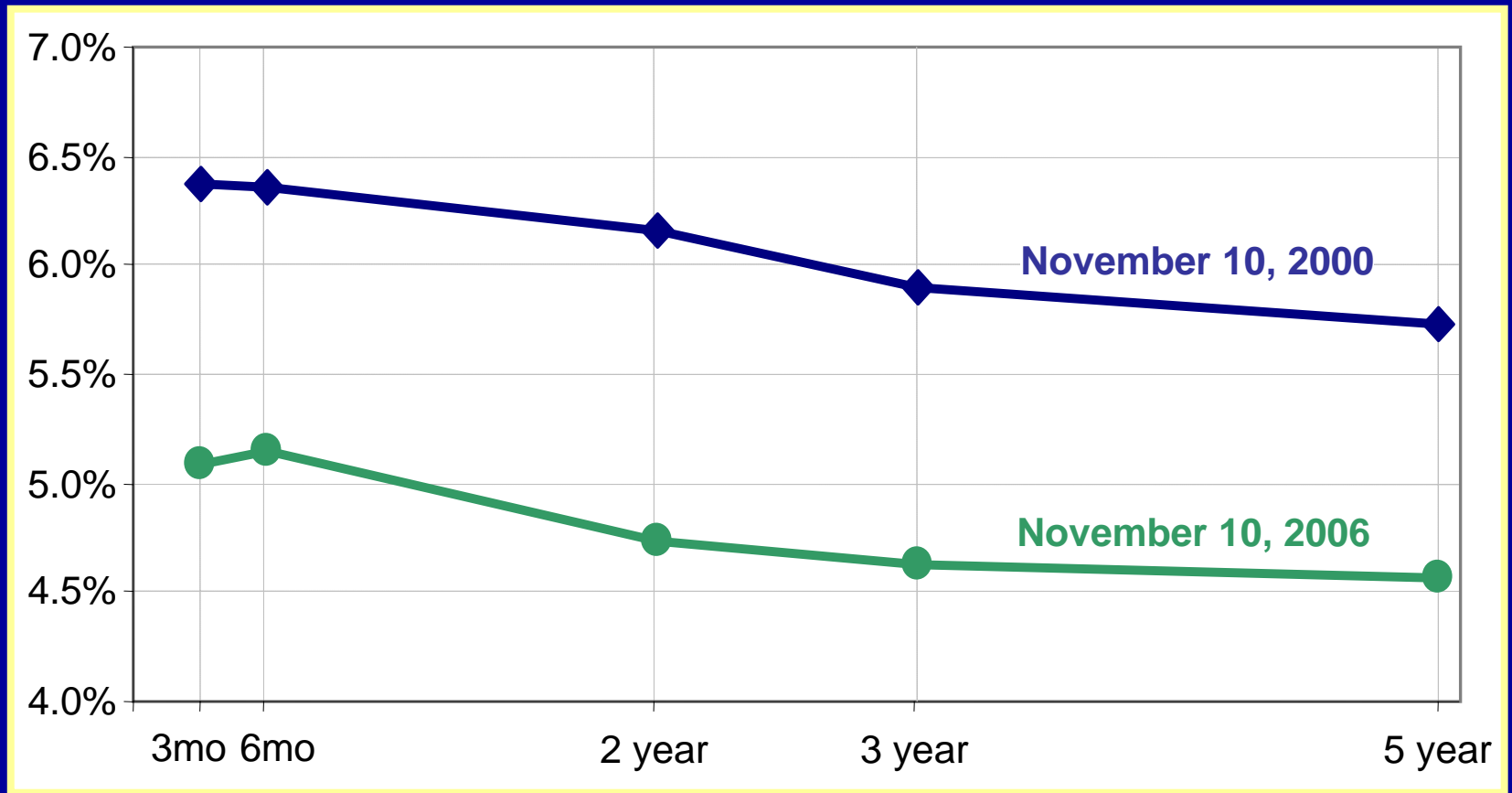
Source: Bloomberg and LAIF website

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# Yield Curve

## U.S. Treasury Yield Curve

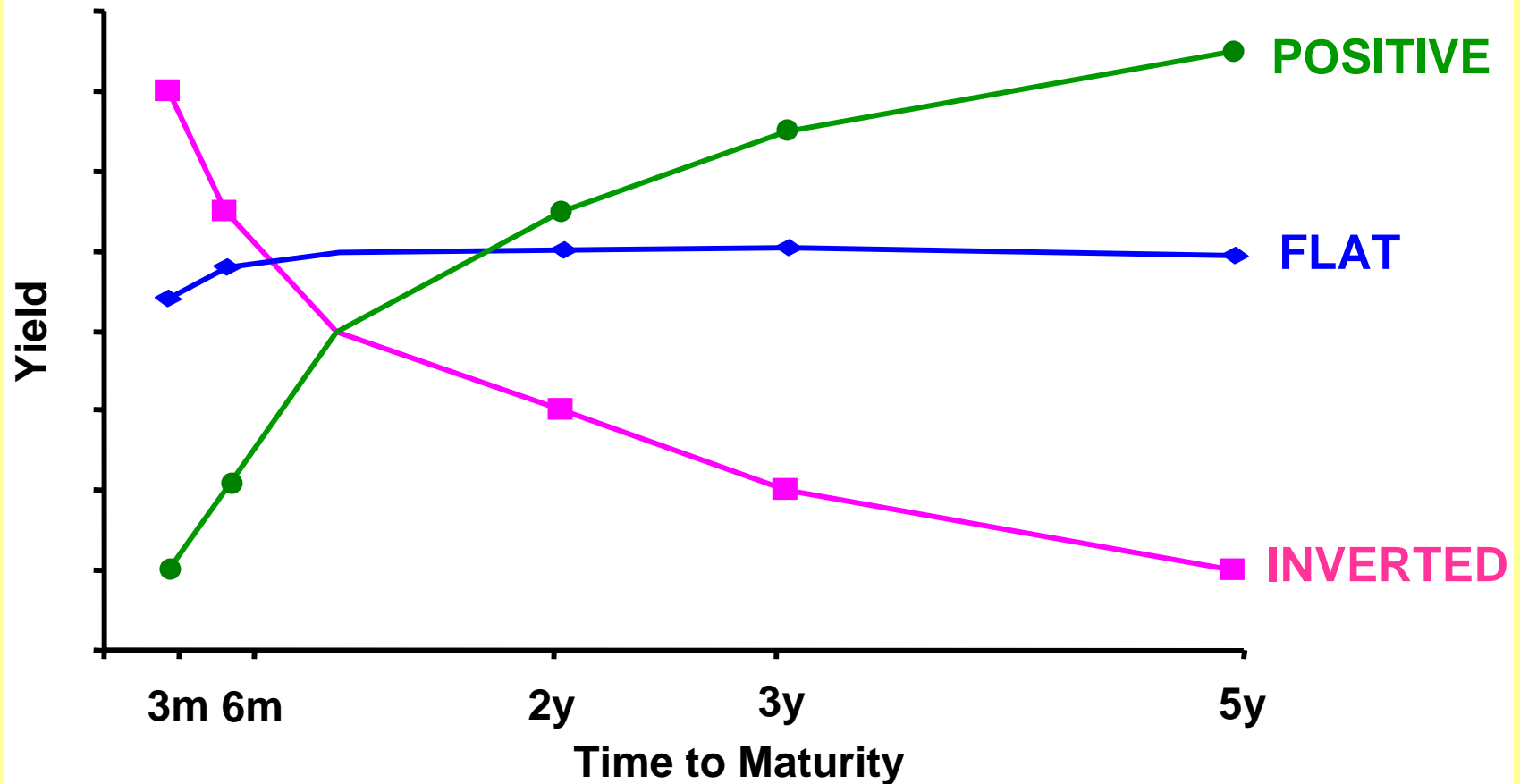
November 10, 2000 versus November 10, 2006



Source: Bloomberg

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# Market Conditions: Shape of Yield Curve



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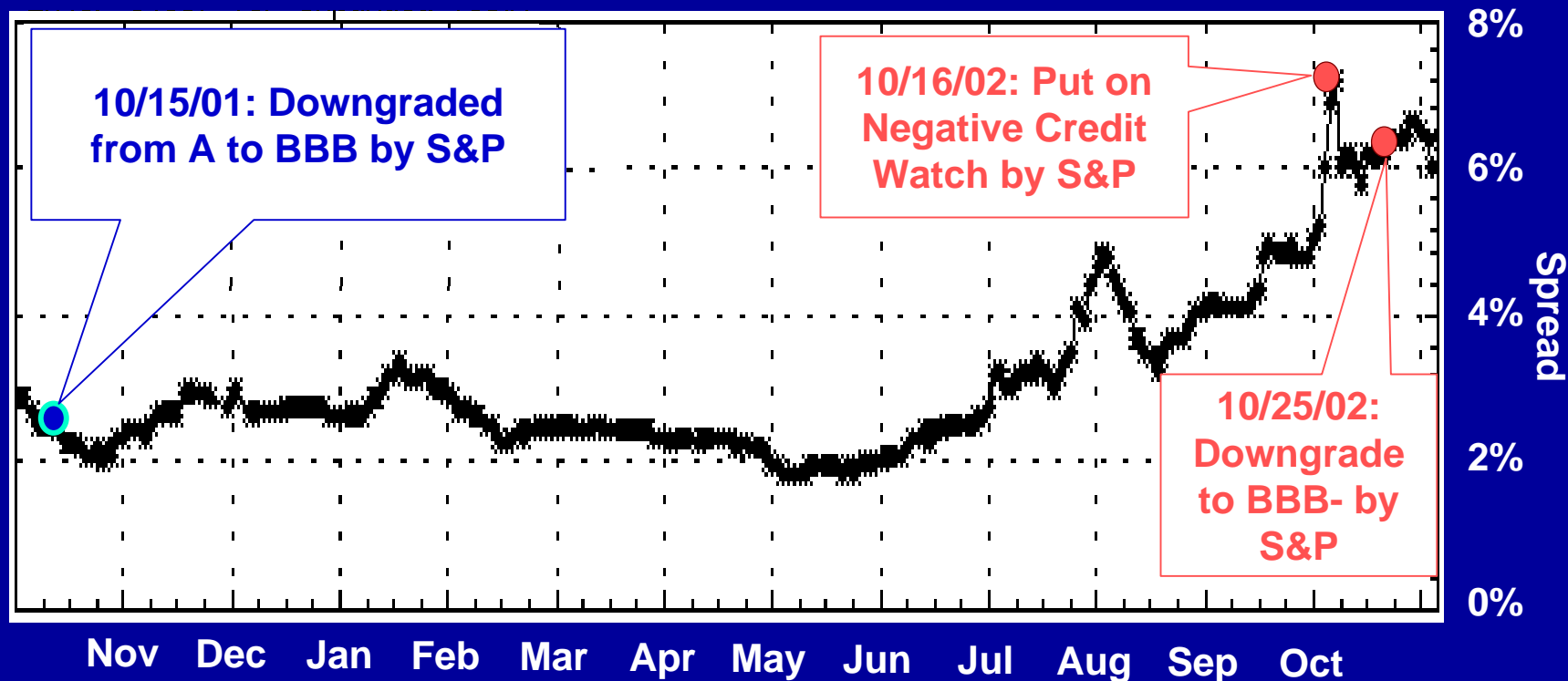
# Something Changes: Credit Quality

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- **Corporate downgrade**
- **Corporate upgrade**
- **Newspaper headlines**

# Credit Quality: Corporate Downgrade

Spread of Ford Motor Credit to 5-Year U.S. Treasury Note  
October 1, 2001-November 1, 2002



Source: Bloomberg

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# Credit Quality: Corporate Upgrade

December 18, 1996

Merrill Lynch upgraded  
to AA- by S&P

October 27, 2006

Merrill Lynch upgraded  
to AA- by S&P

August 15, 2002

S&P puts Merrill  
Lynch on negative  
credit watch

October 17, 2002

Merrill Lynch  
downgraded to A+  
by S&P

Source: Bloomberg

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# Credit Quality: Newspaper Headlines

Fannie Mae and Freddie Mac, emerging from separate accounting scandals, together hold more than \$1.4 trillion in their mortgage portfolios.

"There has to be some concern about the growth of the portfolios, because that's where the risk is."

9/13/2006



# Something Changes: Investment Strategy

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- **Change in expected cash flow needs**
- **Change in risk tolerance**
- **Desire to improve investment income**

# Why Rebalance?

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- **Maintain portfolio relative to a target**
- **Something changes**
  - Market conditions
  - Credit quality
  - Strategy

# How to Rebalance

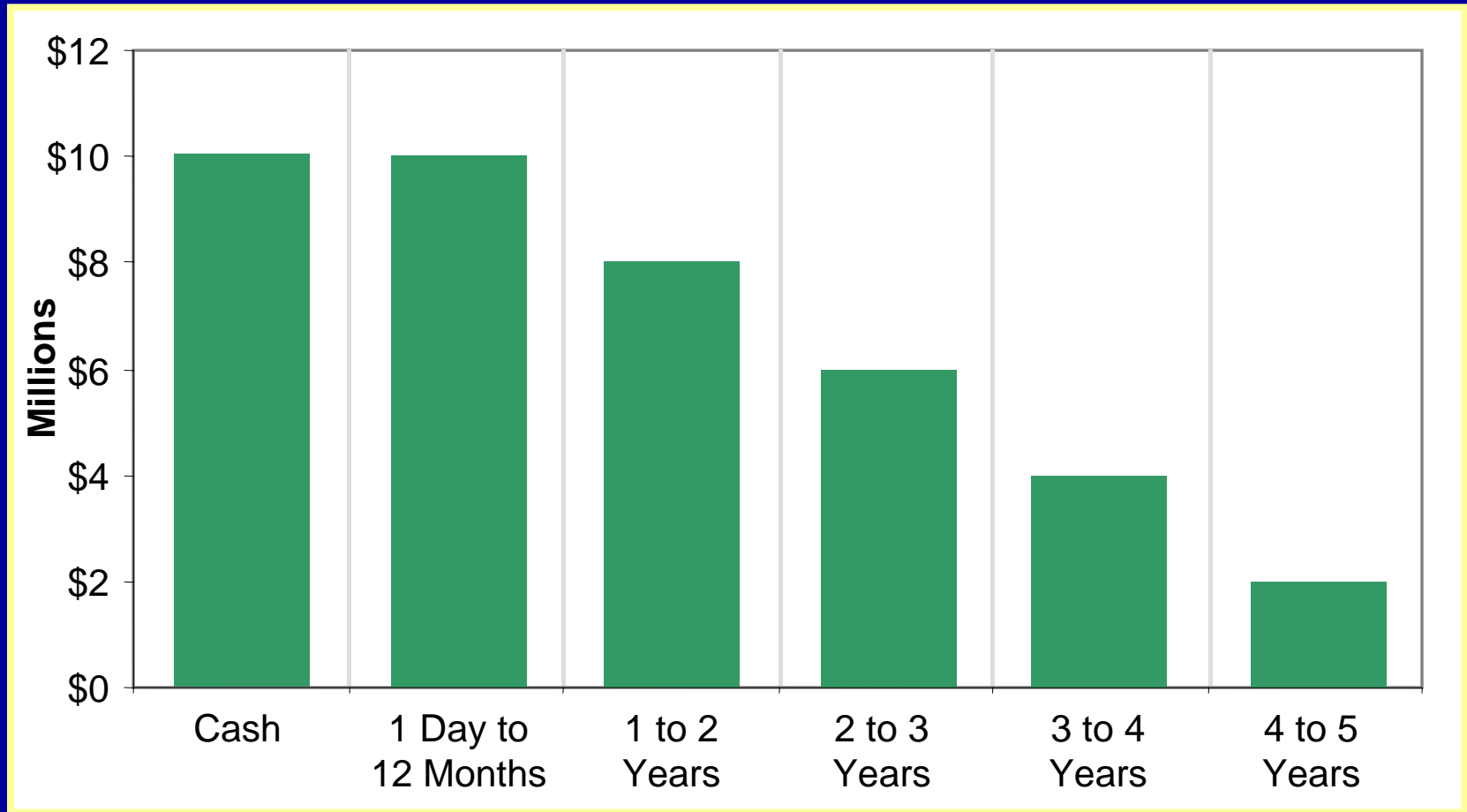
# How to Rebalance

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- **Buy new securities to restructure portfolio**
  - Cash on hand
  - Cash from matured securities
  - Cash from sold security



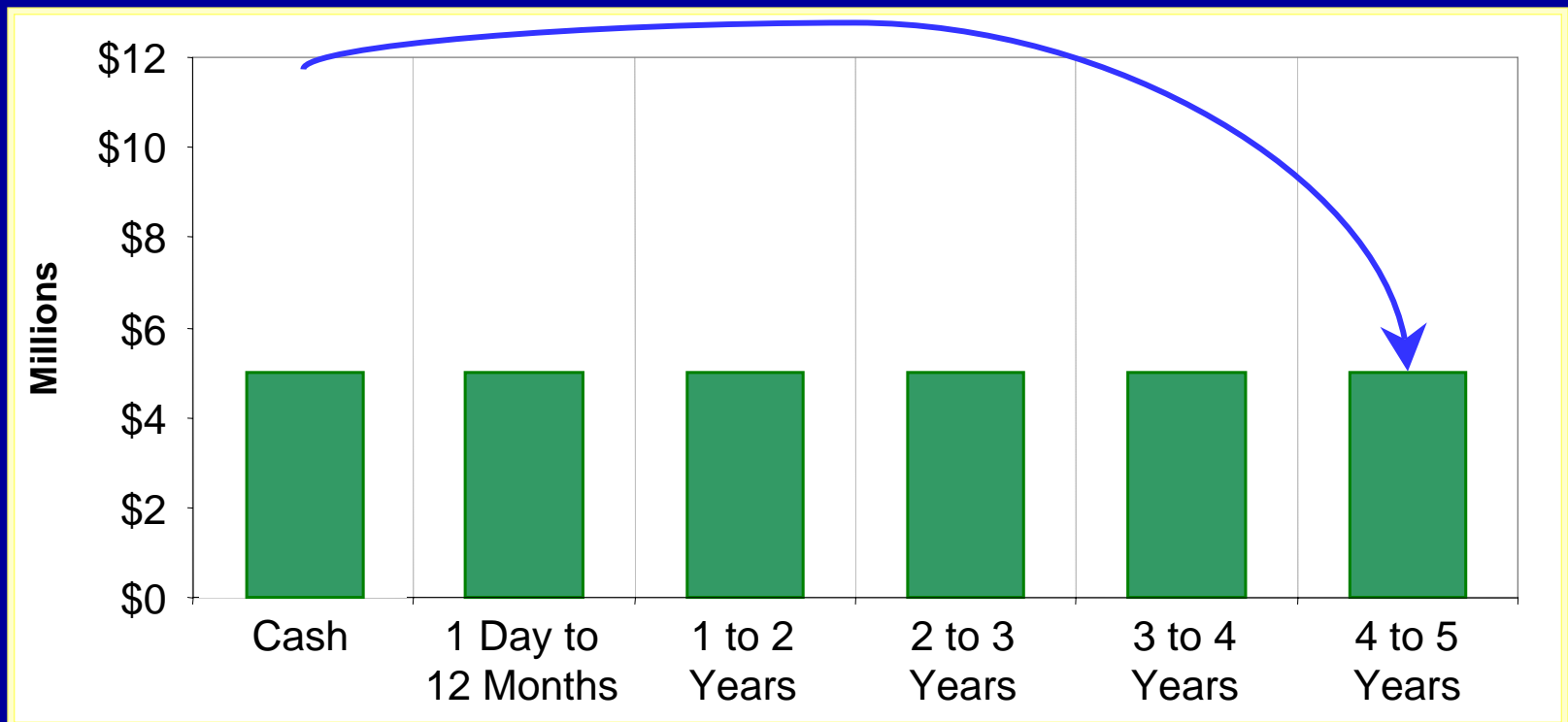
# Rebalance with Cash on Hand



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# Rebalance with Cash from Maturity

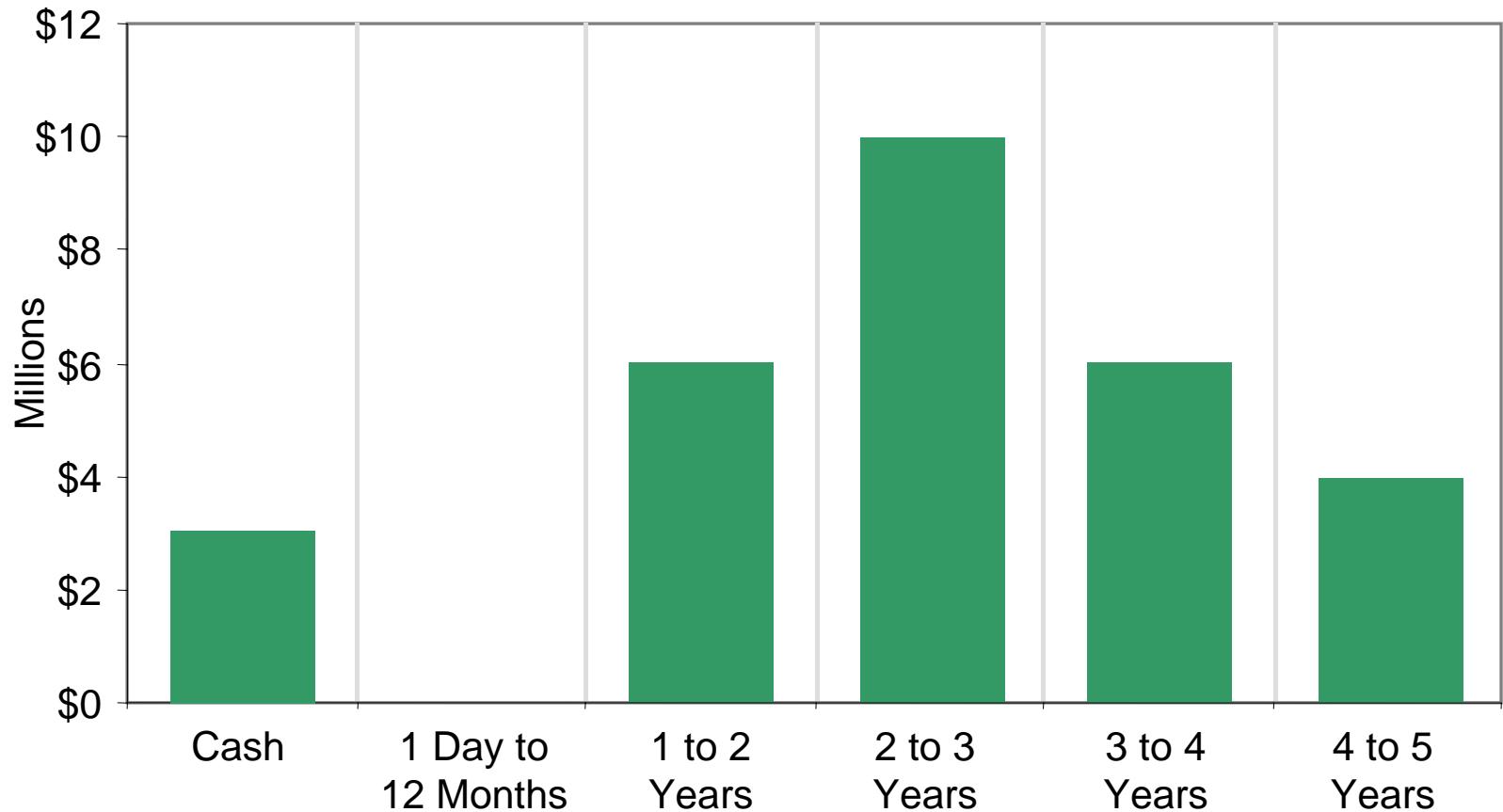
Portfolio with Laddered Maturity Structure



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# Rebalance with Cash from Sale

Time Passes...



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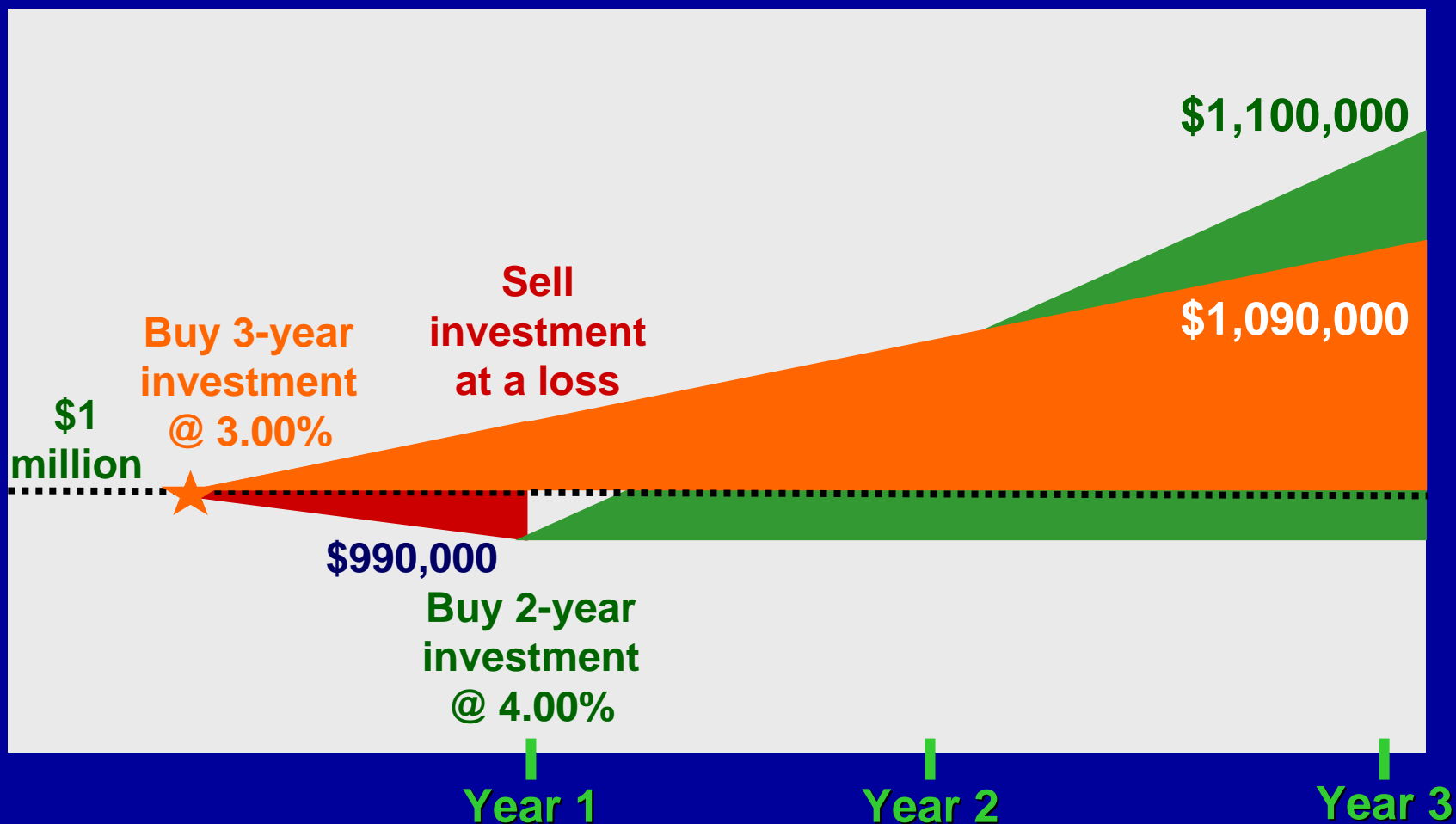
# **Rebalancing to Maintain a Target Structure**

# Why Rebalance?

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- **Maintain portfolio relative to a target**
- **Something changes**
  - Market conditions
  - Credit quality
  - Strategy

# Mechanics of a Trade



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# Trade to Extend Duration



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# Trade to Extend Duration

- Extend duration
- Capture attractive yield

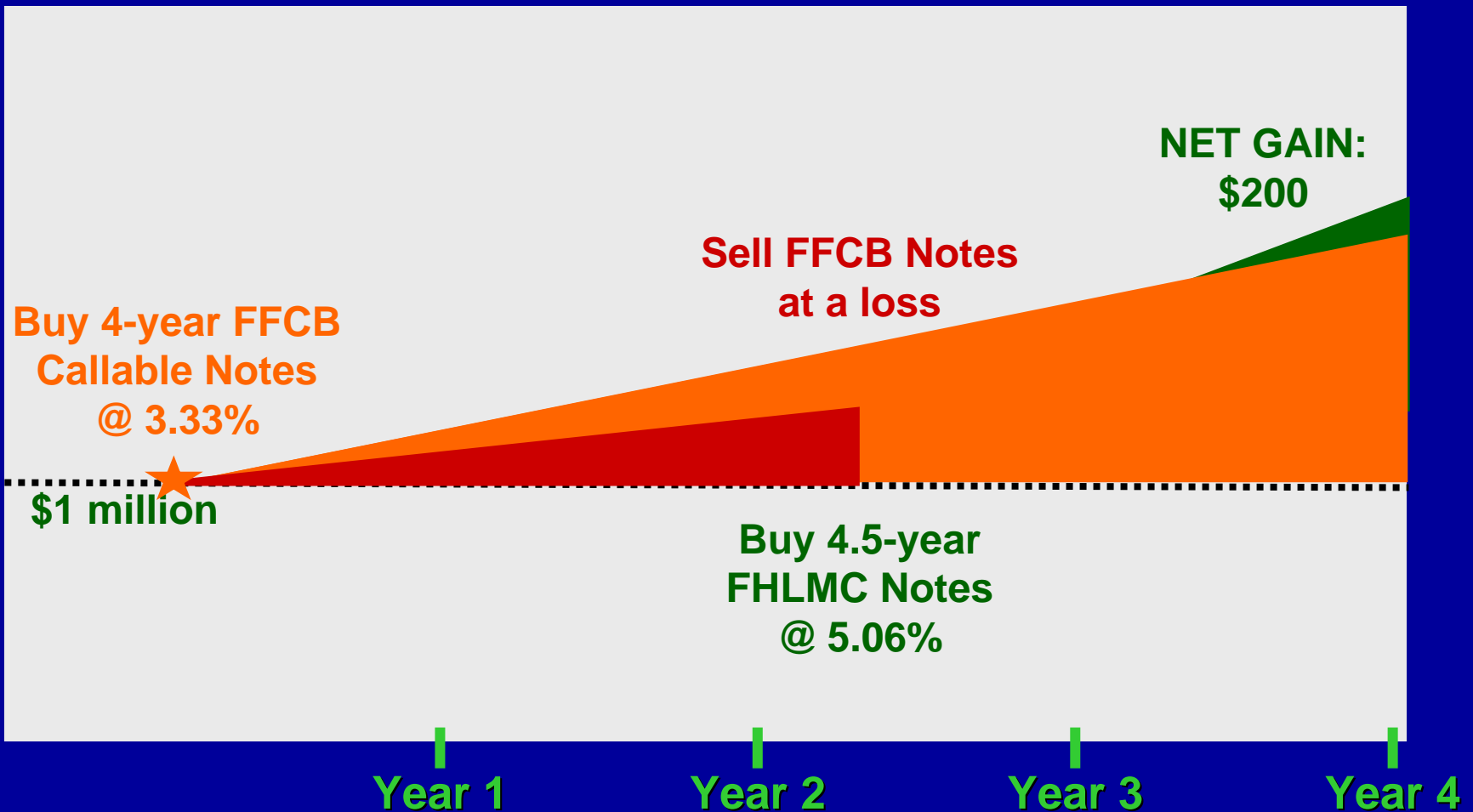
	Sale	Purchase
Security	FNMA Notes	FHLB Notes
Time to Maturity	0.6 years	3.0 years
Par	\$1.7 million	\$1.7 million
Yield on Cost	2.55%	5.88%
Gain/(Loss)	(\$28,900)	-
Income to Original Maturity	(\$26,100)	\$58,900
<b>Net Earnings Impact to Maturity of Sold Security</b>		<b>\$3,900</b>

Source: Bloomberg. Yields as of July 12, 2006

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# Trade to Maintain Average Duration



# Trade to Maintain Average Duration

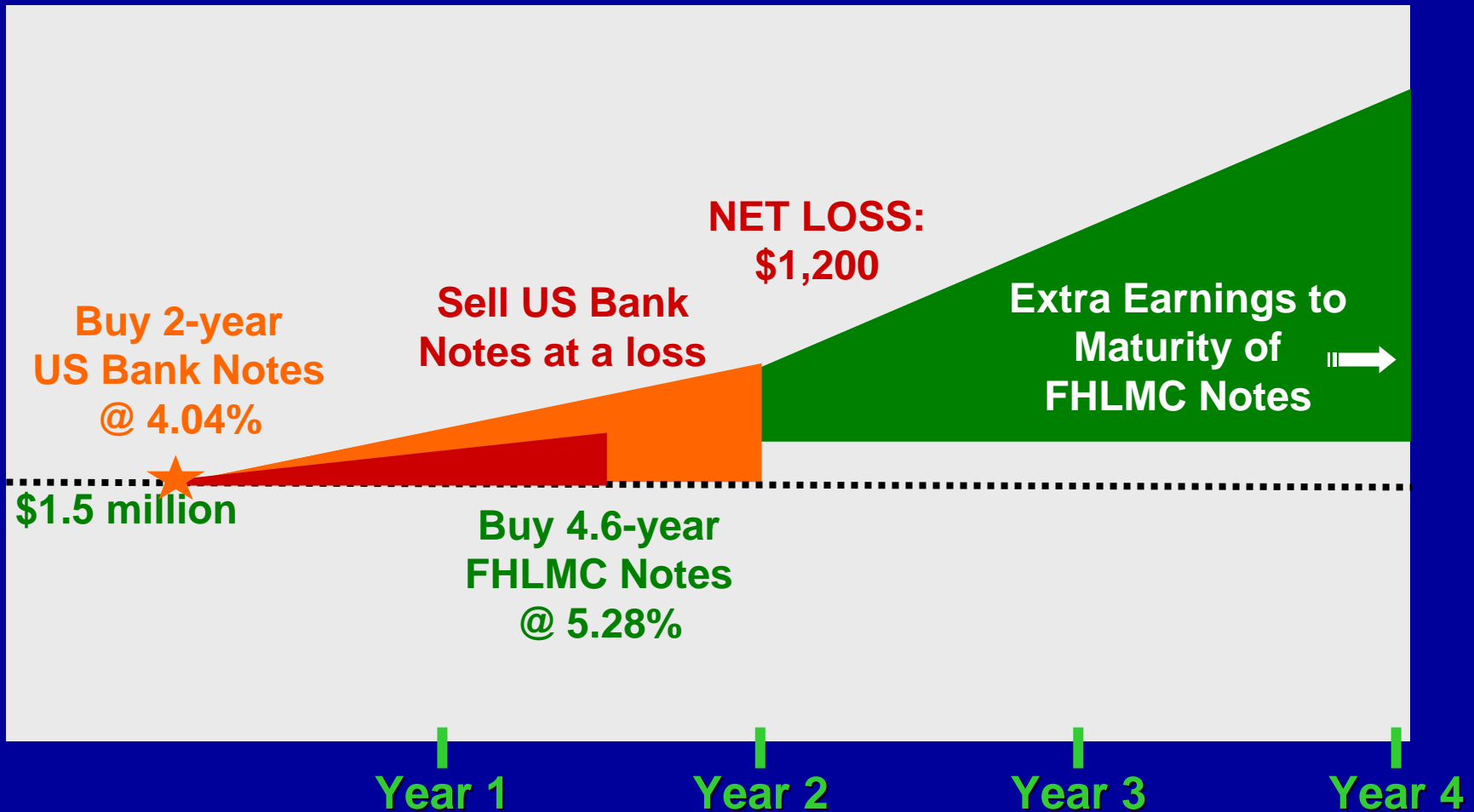
- Extend duration
- Capture attractive yield
- Reduce call risk

	Sale	Purchase
Security	FFCB callable note	FHLMC noncallable note
Maturity	1.8 years	4.5 years
Par	\$1 million	\$1 million
Yield on Cost	3.33%	5.06%
Gain/(Loss)	(\$29,700)	-
Income to Original Maturity	(\$57,700)	\$87,600
<b>Net Earnings Impact to Maturity of Sold Security</b>		<b>\$200</b>

Source: Bloomberg. Yields as of October 18, 2006

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# Trade to Maintain Average Duration



# Trade to Maintain Average Duration

- Extend duration
- Capture attractive yield
- Improve credit

	Sale	Purchase
Security	US Bank Note	FHLB noncallable note
Maturity	0.8 years	4.6 years
Par	\$1.5 million	\$1.5 million
Yield on Cost	4.04%	5.28%
Gain/(Loss)	(\$15,400)	-
Income to Original Maturity	(\$46,200)	\$60,400
<b>Net Earnings Impact to Maturity of Sold Security</b>		<b>(\$1,200)</b>

Source: Bloomberg. Yields as of October 18, 2006

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# Gain/(Loss) on Sale

Description	Maturity	Coupon	Par	Sale Yield
U.S. Treasury Note	9/30/08	4.75%	\$1,000,000	4.75%

Purchase Date	Purchase Yield	Gain/(Loss) on Sale
May 31, 2006	5.00%	\$5,500
August 31, 2006	4.75%	\$0
March 31, 2006	4.50%	(\$5,500)

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# **Rebalancing to Respond to a Change**

# Why Rebalance?

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- **Maintain portfolio relative to a target**
- **Something changes**
  - **Market conditions**
  - **Credit quality**
  - **Strategy**

# Changing Market Conditions

## 2-Year U.S. Treasury Yield History January 1998 – November 2006



Source: Bloomberg

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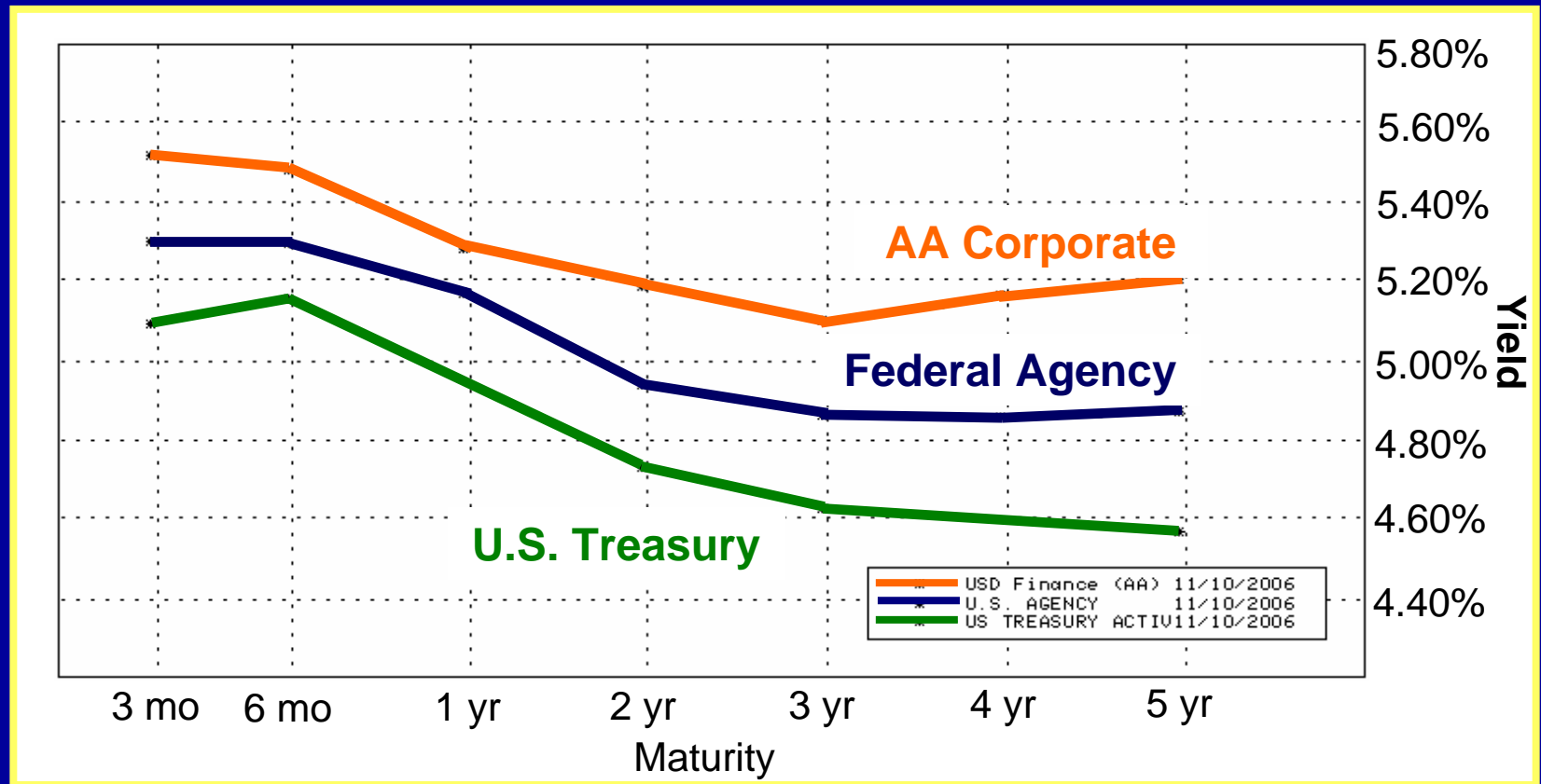
# Rebalancing Trades

Sell	Buy
Short term	Long term
Long term	Short term
Callable	Bullet
Deteriorating credit	Higher credit
High credit	Medium credit

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# Sector Choice

Yield Curves  
November 10, 2006



Source: Bloomberg

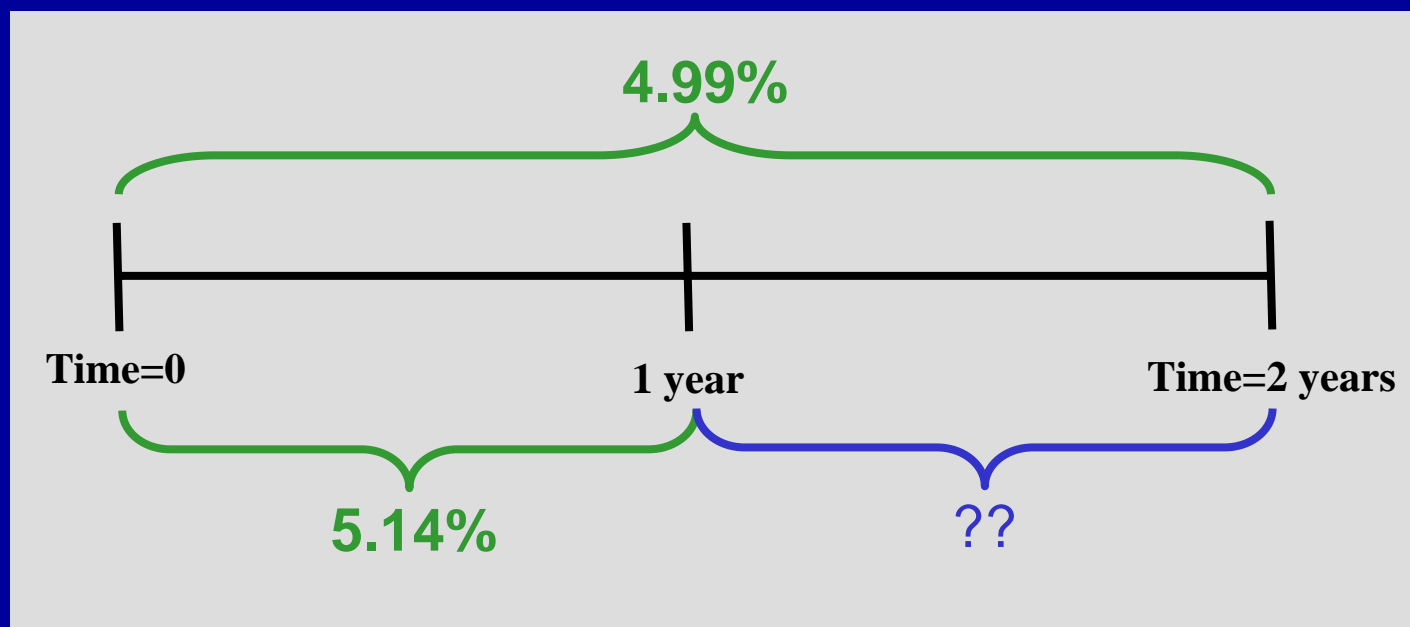
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# Picking the Best Maturity Range

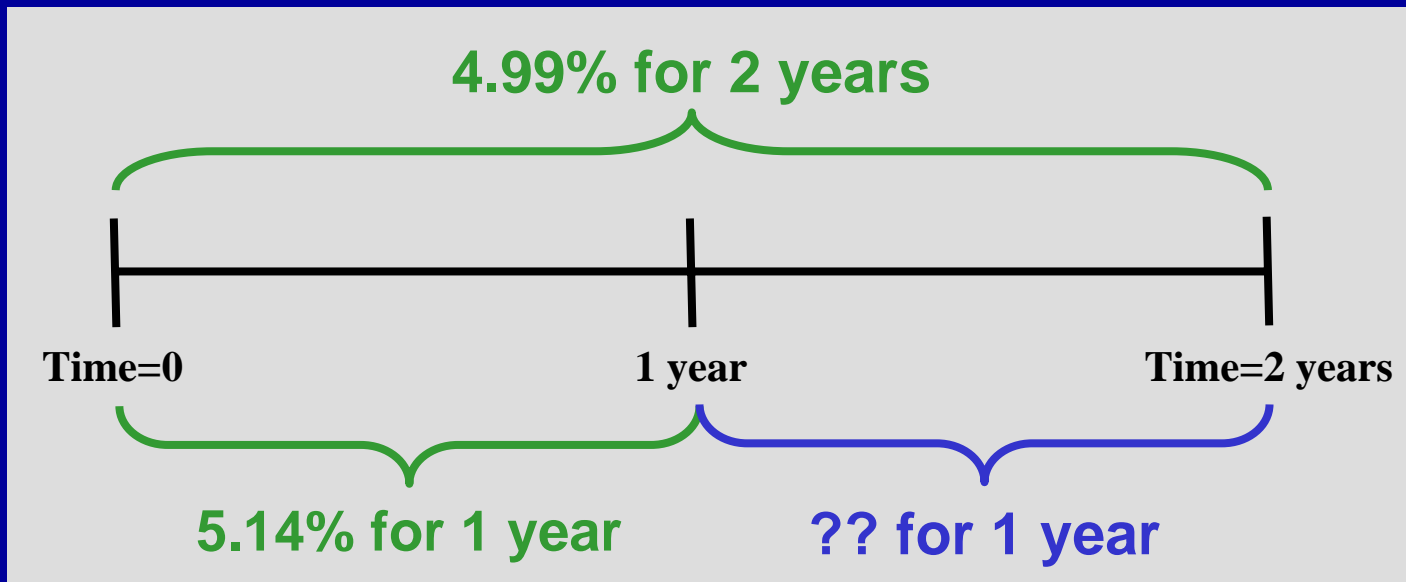
- Considering that the yield curve is inverted, should you buy short or long?
  - Which would you buy?
    - 1-year Agency @ 5.14%
    - 2-year Agency @ 4.99%

# Breakeven Analysis

- Frame the question differently
  - What rate do you have to earn for the last year to breakeven?



# Breakeven Analysis



$$4.99 * 2 \text{ year} = (5.14 * 1 \text{ year}) + (x * 1 \text{ years})$$

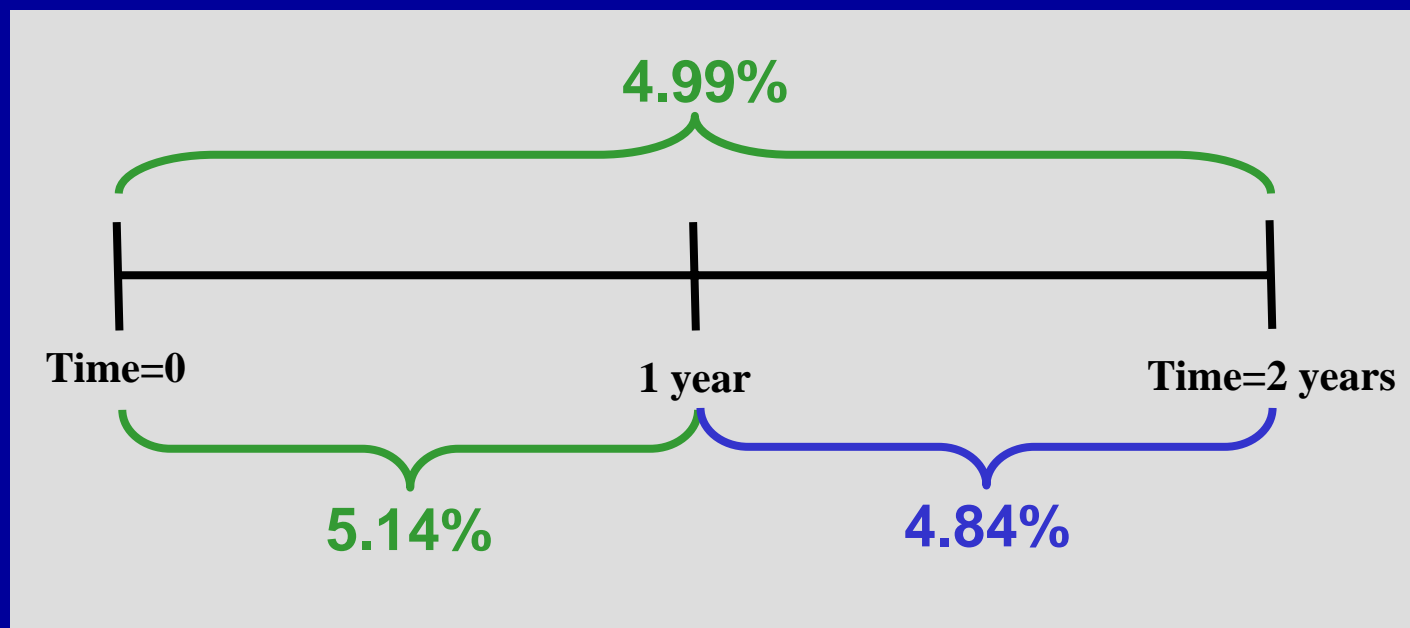
$$9.98 = 5.14 + 1 x$$

$$4.84 = 1 x$$

$$4.84 = x$$

# Breakeven Analysis

- Do you think that rates will fall more than 30 basis points in the next year?
  - If no, buy the 1-year investment
  - If yes, buy the 2-year



# Breakeven Analysis

- How could you know if rates will fall more than 30 basis points in the next year?
  - **Frame the question differently**
- There are 8 Fed meetings in the next year.
- Is it likely that Fed will cut rates 25 basis points at 2 of the 8 meetings?
  - If yes, the Fed will cut rates 30 basis points or more in the next year, so the 2-year is a good choice.
  - If no, then the 1-year is a good choice.

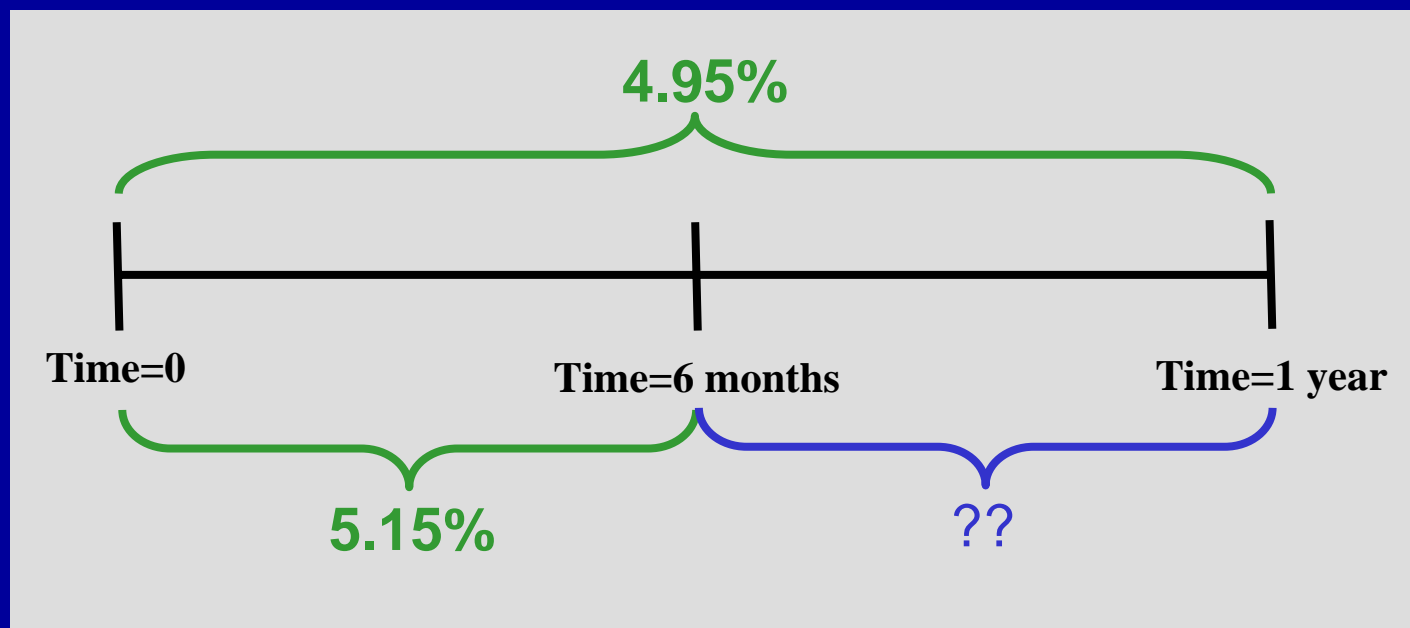
# Your Turn: Breakeven Analysis

- **Considering that the yield curve is inverted?**
  - **Which would you buy?**
    - **6-month Treasury @ 5.15%**
    - **1-year Treasury @ 4.95%**



# Your Turn: Breakeven Analysis

- What rate do you have to earn for the last 6-months to breakeven?



# Breakeven Analysis



$$4.95 * 1 \text{ year} = (5.15 * \frac{1}{2} \text{ year}) + (x * \frac{1}{2} \text{ year})$$

$$4.95 = 2.58 + \frac{1}{2} x$$

$$2.37 = \frac{1}{2} x$$

$$4.74 = x$$

# How Quickly Will Rates Fall?

- The second step in breakeven analyses is determining if you think that the breakeven rate will come to be.
  - But how can you know?

## Yield curve analysis

- The yield curve reflects the market's expectations of future rates
- A look at the yield curve shows you where the “the market” think rates are going at any given moment.

# Federal Agency Callables

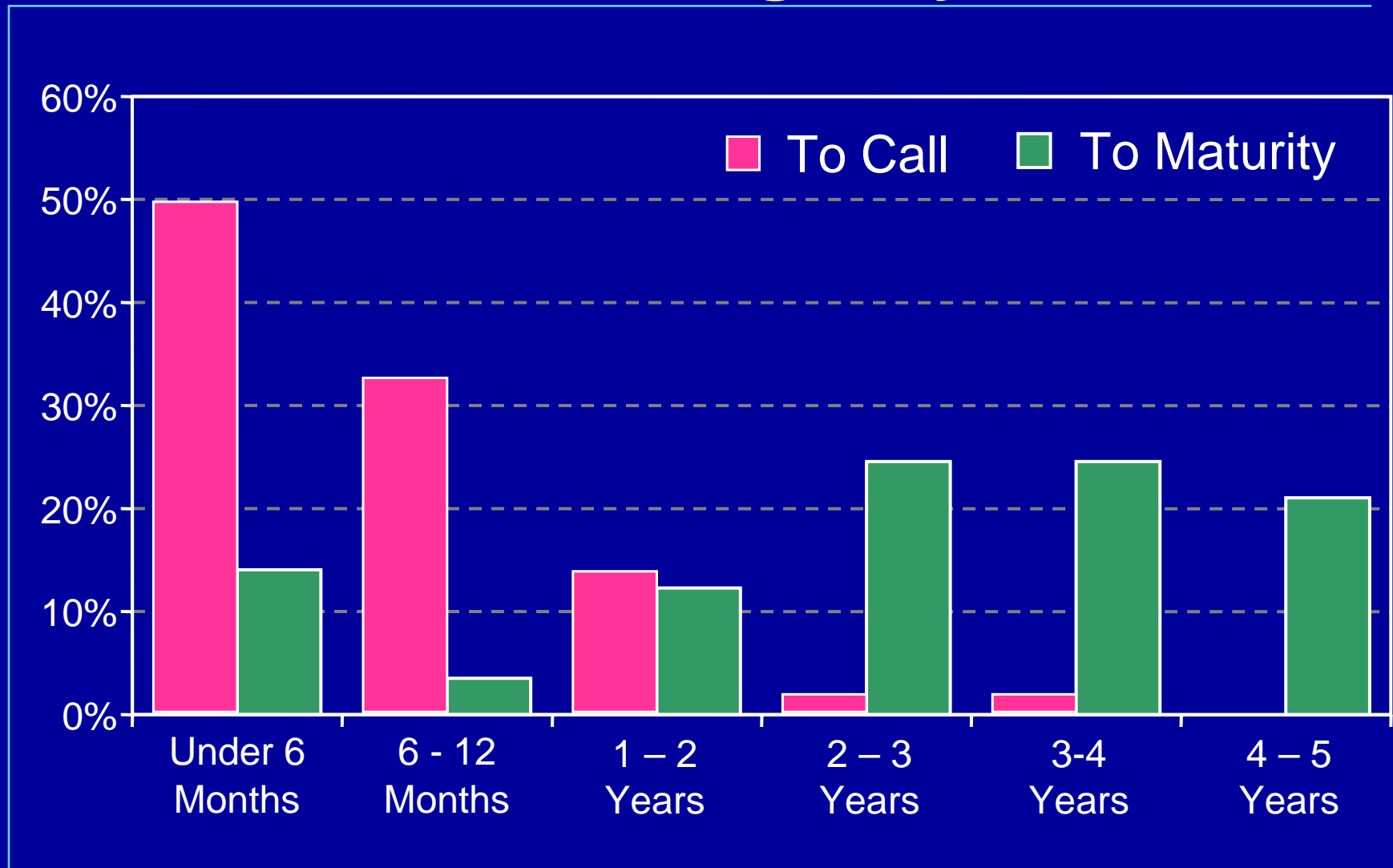
## 3-Year U.S. Treasury Note January 1, 2000 – February 17, 2006



Source: Bloomberg

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# Consequences of Investing Heavily in Callable Federal Agency Notes



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# Why Rebalance?

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- **Maintain portfolio relative to a target**
- **Something changes**
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  - **Credit quality**
  - **Strategy**

# Pay Attention to Corporate Names in the News



The New York Times

Regulatory  
Changes



Acquisitions



Accounting Investigations



Credit Ratings  
Downgrades



# Which Corporates Would You Sell?

<b>Corporate Issuer</b>
<b>Fortune Brands</b>
<b>NY Times</b>
<b>Xerox</b>
<b>Walt Disney</b>
<b>Ford</b>
<b>AIG</b>
<b>Merck</b>
<b>Wachovia</b>
<b>UPS</b>
<b>General Electric</b>
<b>Caterpillar</b>
<b>Proctor &amp; Gamble</b>
<b>Bayerische Landesbank</b>
<b>West Deutsche Landesbank</b>
<b>Merrill Lynch</b>

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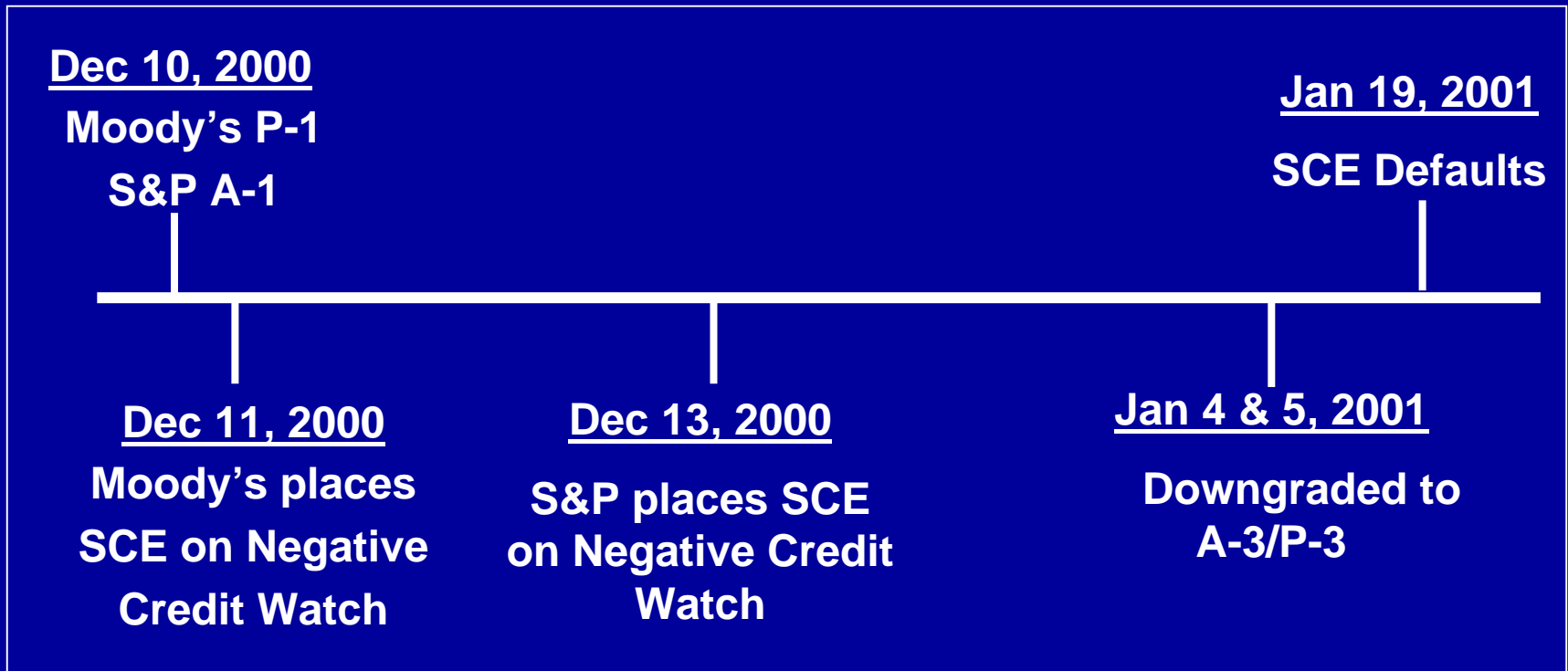
# Which Corporates Would You Sell?

Corporate Issuer	Moody's	Standard & Poor's
Fortune Brands	Baa2	BBB
NY Times	Baa1	A-
Xerox	Ba1	BB+
Walt Disney	A3	A-
Ford	B1	B
AIG	Aa2	AA
Merck	Aa3	AA-
Wachovia	Aa3	A-1*(short term)
UPS	Aaa	AAA
General Electric	Aaa	AAA
Caterpillar	A2	A
Proctor & Gamble	Aa3	AA-
Bayerische Landesbank	Aa2	A
West Deutsche Landesbank	A1	A-
Merrill Lynch	Aa3	AA-

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# Monitor News in Corporate Sectors in Your Portfolio

## Southern California Edison: A Cautionary Tale Timeline of the Bankruptcy



# Why Rebalance?

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- **Maintain portfolio relative to a target**
- **Something changes**
  - **Market conditions**
  - **Credit quality**
  - **Strategy**

# Change in Strategy

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- Go longer
- Go shorter

# Change Strategy For Market Reasons

- Waiting for rates to stabilize before going longer

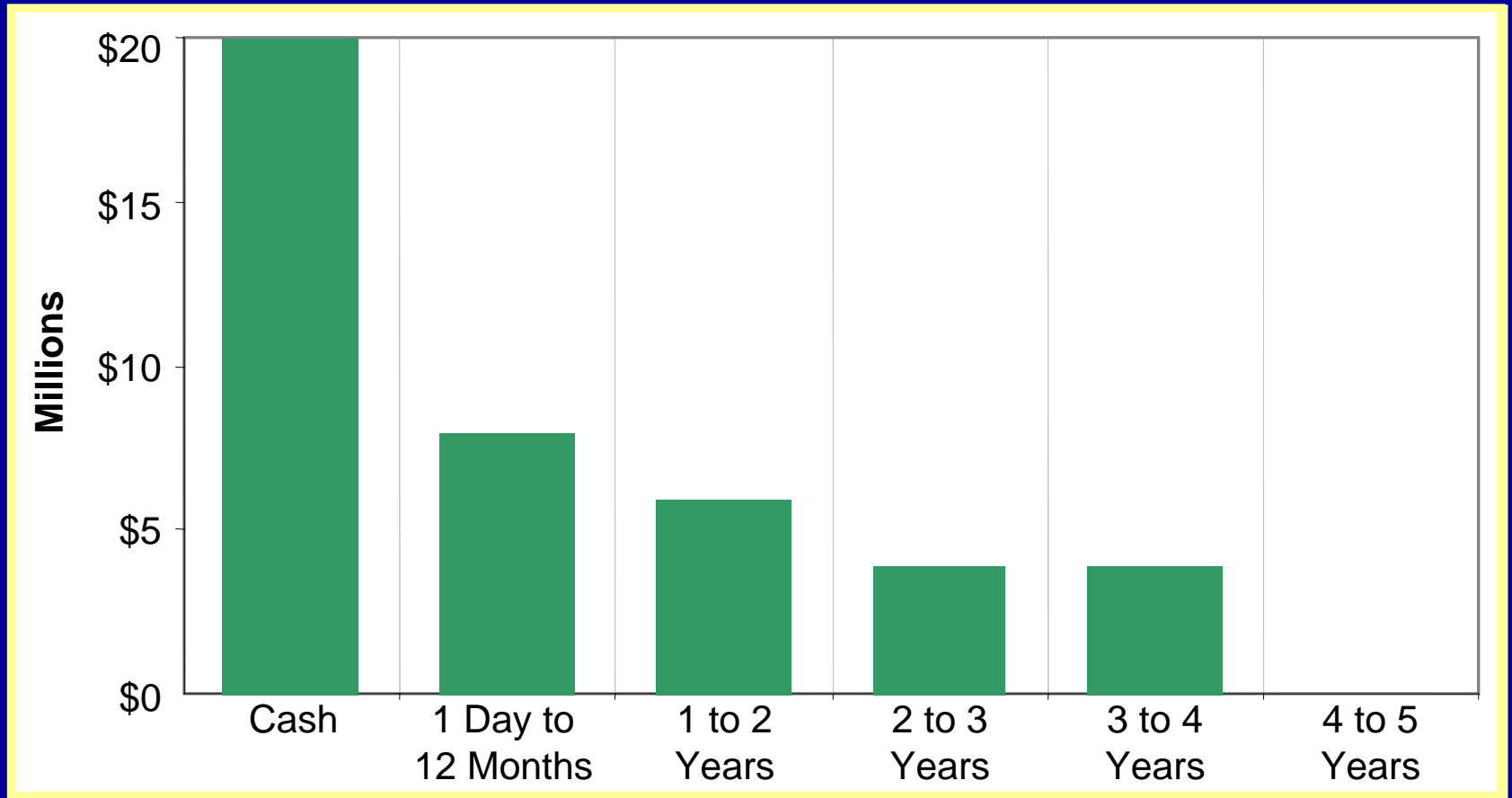
2-Year U.S. Treasury Yield History  
January 2006 – November 2006



Source: Bloomberg

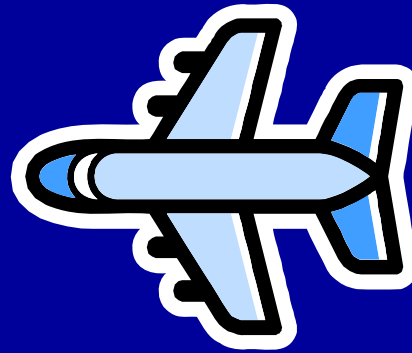
# Extend Duration of Portfolio

## Before Rebalancing

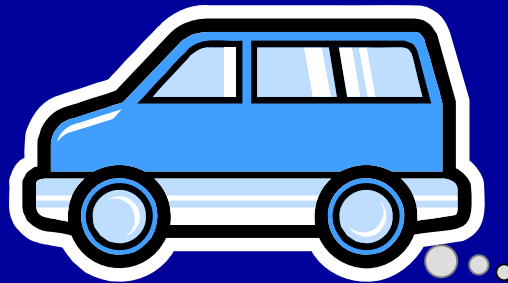


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# THE END



Travel Safely!



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